

[illegible]

Client	شركة طرق الرياض للمقاولات	Report No.	240463.36
Project	مشروع البنية التحتية - مخطط تلال الغروب	Sampling Date	23/6/2024
Location	جدة - حي الأمير فواز	Sample by	Sumon
Sample Description	BITUMIN BASE COURSE LAYER	Report Date	25/6/2024
Station	STA 0+020 to STA 0+214 Raod 03 Block 11	Tested By	Saddam

Superpave Mix Design Analysis

Bulk Specific Gravity of Compacted Specimen & Volumetric Properties							
Specimen I.D.	Ndes			Nmax			Design Criteria
	1	2	Ave.	1	2	Ave.	
a. Weight in air, dry (gm)	4820.0	4804.0		4825.0	4815.0		
b. Weight in air, SSD (gm)	4845.0	4831.0		4845.2	4836.0		
c. Weight in water, (gm)	2923.0	2914.0		2954.0	2944.3		
d. Volume, (cc)	1922.0	1917.0		1891.2	1891.7		
e. Specific Gravity (Gmb) (a/d)	2.508	2.506	2.507	2.551	2.545	2.548	
Height @ Nini	137.0	136.0	136.5	136.0	136.0	136.0	
Height @ Ndes	113.0	112.0	112.5	109.0	109.5	109.3	
Height @ Nmax	—	—	—	113.9	114.0	114.0	
% Gmm @ Nini	79.4	79.2	79.3	—	—	—	89 MAX
% Gmm @ Ndes	96.3	96.2	96.2	—	—	—	96±1.5
% Gmm @ Nmax	—	—	—	97.9	97.7	97.8	98 MAX
Air Voids %	3.7	3.8	3.8	2.1	2.3	2.2	2.5 - 5.5%
Voids in Mineral Aggregate (VMA) %	13.9	13.9	13.9	—	—	—	12min-14max
Voids Filled (VF) %	73.0	72.6	72.8	—	—	—	65 - 75
Dust Proportion:	1.05						0.80 - 1.60

Maximum Theoretical Specific Gravity (Gmm)				Mix properties	
Specimen I.D.	1	2	3	Gb =	1.020
a. Net weight of loose mix (gm)	2001.0			Gsb =	2.780
b. Net weight of flask & water (gm)	9353.0			Ps =	95.461
c. Net weight of flask, loose mix & water	10586.0			Gse =	2.81
d. Maximum Theoretical Specific Gravity, Gmm (A/(A+B-C))	2.605			Pba =	0.44
e. Average Gmm	2.605			Pbe =	4.12

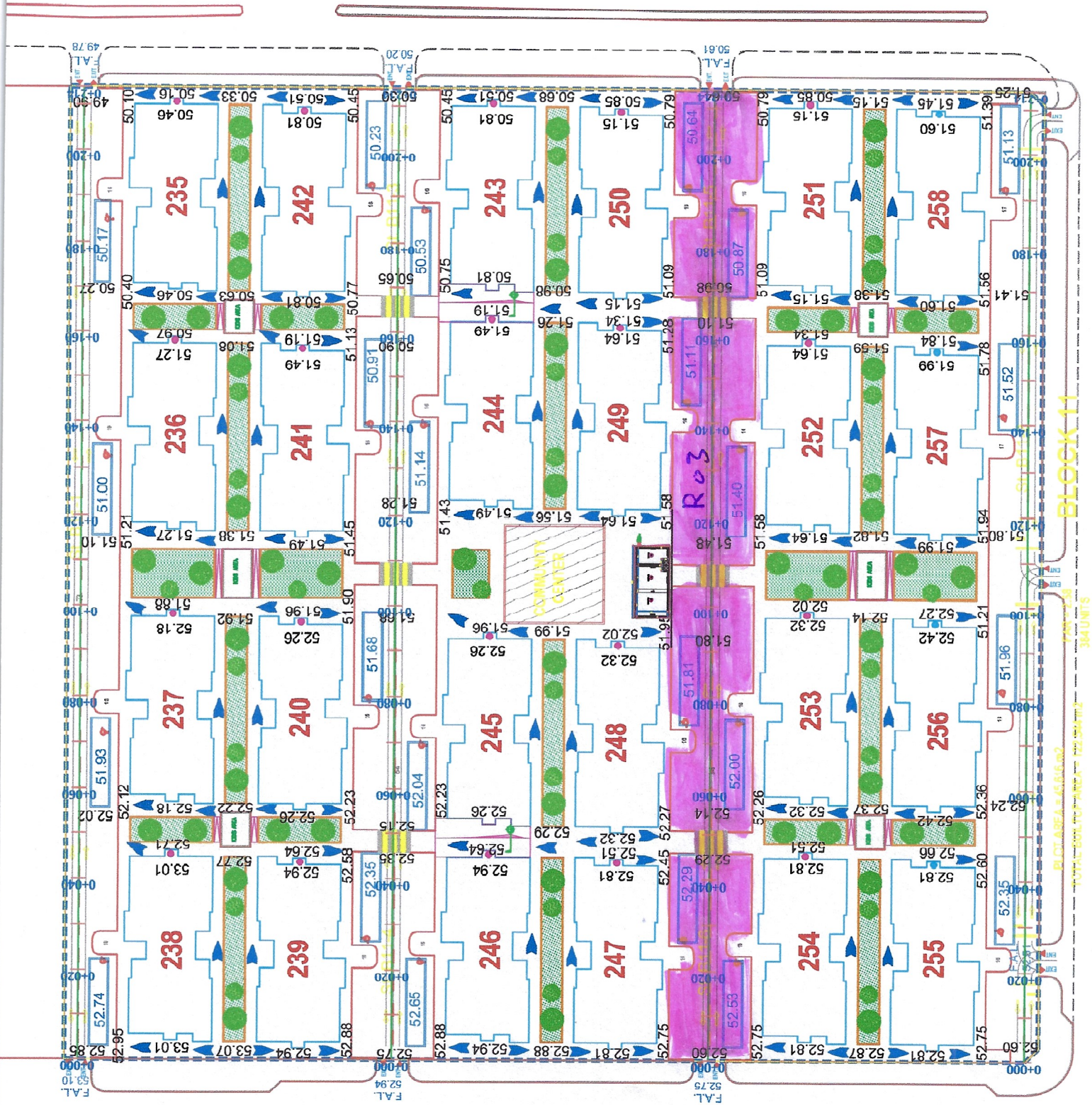
Extraction & Gradation			Total weight of Agg: 2477.2		Sieve analysis		
			Sieve Size	Weight Retained gm	Percent Passing	JMF Limit	Ave.
Asphalt Content	1	2	1-1/2"	0	100.0	100.0	100.0
			1"	102	95.9	91 - 99	95.9
a. Wt of sample before test, gm	2595.0		3/4"	295	88.1	81 - 89	88.1
b. Wt of sample after test, gm	2475.2		1/2"	641	74.1	70 - 78	74.1
c. Wt of filter before test, gm	29.1		3/8"	960	61.2	58 - 66	61.2
d. Wt of filter after test, gm	31.1		#4	1479	40.3	35 - 45	40.3
e. Wt of sample in filter (c-d), gm	2.0		#8	1671	32.5	29 - 37	32.5
f. Wt of total agg, (b+c) gm	2477.2		#16	1885	23.9	21 - 29	23.9
g. Wt of Bitumen, (a-f) gm	117.8		#30	2022	18.4	13 - 21	18.4
h. Percent AC (g/a x 100), %	4.54		#50	2192	11.5	8 - 16	11.5
i. Average Asphalt Content, %	4.54		#100	2376	4.1	3.2 - 7.2	4.1
j. Optimum asphalt Binder content	4.7% ± 0.4		#200	2370	4.3	2 - 5	4.3
			Pan				

Lab. Tech.

Lab. Eng.



Room 372575 commercial Jeddah, license 100 Commercial Registration 4030391463
Email: lab@proficiencylab.com www.proficiencylab.com Mob.: 0552210350
30 St. - Ar Rabwah Dist. - Jeddah, Kingdom of Saudi Arabia



BLOCK 11

LOT AREA = 45,616.02
TOTAL LOT AREA = 72,237.72
34 UNITS